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Market Transformation Through International Cooperation: The ENERGY STAR® Office Equipment Example

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ABSTRACT

Though most market transformation efforts take place at the national or even local level, this paper, using the example of the ENERGY STAR® Office Equipment Program, illustrates the possibilities of international cooperation for achieving larger scale transformations. Specifically, potential benefits include complete and global market transformation, production efficiencies, and reduction of potential barriers to trade, as well as administrative efficiencies in managing programs.

To achieve these efficiencies, managers of market transformation efforts must overcome significant challenges such as dealing with multiple languages and cultures, differing power conditions and energy prices, and competing policy priorities. While these issues can be managed, it is also challenging to set programs' efficiency levels.

The paper reviews these challenges and benefits, citing the case of the ENERGY STAR international collaboration on office equipment, offering two years of experience between the U.S. and Japan, and anticipating Europe's entry into the program.

Introduction

The ENERGY STAR programs were introduced in 1993 as part of President Clinton's Climate Change Action Plan. This plan was based on the premise that greenhouse gas emissions in the United States could be significantly reduced through voluntary efforts. As noted in the Climate Action Report, the purpose of the program is to "bring high-efficiency consumer products into America households and buildings..., including those for space heating and cooling, water heating, lighting, refrigeration laundering, cooking and other services" (CAR 1997). The Climate Action Report estimates that the use of ENERGY STAR compliant products will help save \$10.2 billion dollars and prevent 23.7 million metric tonnes of carbon equivalents (MMTCE) of greenhouse gas emissions in the U.S. alone by 2010.

The programs were initiated to overcome U.S. consumers' "under-investment" in technologies that can help reduce energy use. A recent study completed by the Department of Energy found that the United States could reverse its trend toward increasing carbon emissions by 2010 simply by investing in existing cost-effective technologies (Interlaboratory Working Group 1997). The ENERGY STAR Programs were launched in 1993 with the introduction of the computer program. By 1998, the programs expanded to cover a broad range of commonly used energy intensive residential products.

The goals of the ENERGY STAR programs are specifically to address a few of the market failures that

economists cite when discussing the under-investment in energy efficient technologies. Specifically, these market failure are lack of information, difficulty in identifying efficient products, and higher purchase price for efficient products. In order to address these challenges, the ENERGY STAR labeling programs concentrate on several key activities, including:

- Identifying efficient products with the ENERGY STAR logo;
- Providing objective information to consumers about product choices;
- Working with national, regional, and local groups to promote energy efficiency;
- Reducing the owning costs of efficient equipment and products through alternative financing.

Conditions for International Coordination in Market Transformation Programs

Given the focus of activities, targeting education and information in order to increase market penetration of energy efficient products, the possibility of coordinating these efforts internationally was raised. The main advantages of international cooperation arise from sending a clear and consistent signal to manufacturers concerning energy efficiency requirements for each product, thereby increasing supply and demand for such products in multiple markets. However, it is important to note that several general conditions must be met in order to launch such a program internationally.

First, the products targeted for international market transformation efforts must be manufactured and distributed internationally and the technologies employed must be consistent across markets to ensure that the specifications are consistent and fair, no matter where the logo is used. This is true in the case of office equipment and some consumer products, where the only difference among products in different countries might be the transformer providing the appropriate local voltage. By contrast, many residential appliances such as refrigerators or clothes washers employ vastly different designs and technologies in different end markets, and therefore it would be very difficult to coordinate a single consumer message with a one set of voluntary requirements. In addition, just as the product should be universal in nature to employ an international logo, using an international logo on products that are limited to specific markets eliminates some of the advantages of an international logo outlined below and in fact could lead to market confusion and inconsistent messages.

The second general condition for entering an international program is that in order to ensure fairness and consistency according to international trade agreements, the means of measuring the efficiency of products must be consistent across markets. In the ENERGY STAR context, energy consumption in computers can be tested in the same manner in every market, which makes them good candidates for international labeling, whereas test methods and conditions for some appliances vary more widely, eliminating the possibility for a single program that captures all products.

Another requirement for starting an international program is that all parties must agree on the attributes represented by the logo. In the case of the single-attribute ENERGY STAR program, different countries cannot expand the meaning of the logo (for instance, to include recycled content) without both degrading consumer understanding of the logo and eliminating the value of cooperation with other governments and manufacturers.

If these conditions can be met, one of the major advantages of coordinated international labeling mechanisms such as ENERGY STAR is the increase in manufacturer acceptance and support in an era of fierce global competition for many products. This is especially true for international products (e.g., computers, faxes, and monitors), for which building to common specifications regardless of the products' final destination is critical to minimizing product development and production costs. Under these conditions, arriving at common international energy efficiency and labeling specifications can be critical in minimizing

the costs of manufacturer compliance, while advancing the goal of market transformation.

Origins of ENERGY STAR International Coordination

Though ENERGY STAR began as a U.S. domestic program, manufacturers supplying the U.S. market represent a wide number of countries. At this time, manufacturers from 14 countries offer ENERGY STAR compliant products in the United States. EPA has welcomed all manufacturers into the program, and each participant is offered an equal voice in discussing program direction. Therefore, from its launch, ENERGY STAR was in fact an international program, at least in terms of the supply side. In addition, manufacturers were selling the same energy efficient products with the newly evolving power management features in their other target markets, so the logo began to appear on products and packaging throughout Europe and Asia.

In the United States, an Executive Order specified that federal agencies purchase only those computers, monitors, and printers that meet the criteria set forth in the ENERGY STAR program (Office of the White House, 1993). This market push was one of the factors that led to the broad adoption of ENERGY STAR by computer manufacturers worldwide. Broad industry acceptance in turn made the ENERGY STAR the likely basis for growing thoughts of coordinating voluntary international energy efficiency program at the international level.

When the ENERGY STAR computer and printer program began to make an impact, in large part due to the U.S. Executive Order, representatives of U.S. EPA, the European Commission (Energy Directorate, DG-XVII), and the Japanese Ministry of International Trade and Industry (MITI) initiated discussions about working together to create incentives for an energy efficient office equipment market. The agencies had independently begun to consider policy options, including the ENERGY STAR program in the United States, national logos and regional programs in Europe, and voluntary energy efficiency levels in Japan. Through continued discussions, the three agencies determined that the program would succeed better in transforming the market if all three agencies — representing the largest office equipment markets — used a single logo and uniform criteria to encourage the development of power management features for office equipment.

Once the agencies agreed upon the ENERGY STAR logo and program as the basis for international cooperation, they began to lay the groundwork for an international arrangement to manage the program. Through extensive discussions throughout 1994 and 1995, it became clear that despite the common goal of working together on the ENERGY STAR program, the formal requirements for reaching agreement were difficult to reconcile. The groups decided to pursue several tracks in order to meet the Japanese preference for a relatively low profile inter-agency agreement, and the European requirement to execute a formal inter-governmental arrangement that could be implemented in all 15 member countries of the European Union. As one would expect, informal arrangements are simpler to execute, and EPA and MITI completed and signed a Letter of Intent to cooperate the ENERGY STAR Office Equipment Program in October 1995. Based on this arrangement, the European Commission began preparing a inter-governmental agreement that would be quite similar in substance but reflect its need for a formal arrangement. However, the formal procedures and more complex requirements of the U.S.-European agreement took a significantly longer time to complete, and an agreement is not yet in place.

Since the U.S.-Japan agreement was signed, EPA and MITI have worked closely to establish mechanisms for maintaining the same program in two countries, including coordinating closely when defining new or revised program requirements, and maintaining ongoing contact with industry representatives. Manufacturers from anywhere in the world may join the program and qualify their products through either agency, and will be recognized by the other. Both agencies publish participant and product listings on the web and exchange information about market and technology trends, energy savings, and consumer education

efforts in their respective countries. Through this agreement, EPA and MITI have maintained transparent voluntary energy efficiency programs that reinforce each other.

Throughout the same period, EPA, in coordination with other U.S. agencies, has been working to establish the U.S. domestic arrangements required to enter a formal inter-governmental agreement with the European Union. Despite a great many administrative challenges, EPA and Europe are confident that the additional time spent is worthwhile, and hope to enter an agreement before the end of 1998. The time required to reach this stage has allowed for careful consideration of the most effective program structure for international coordination, and all countries involved are hoping to speed into the international effort as quickly as possible. At the same time, office equipment sales and energy consumption have continued their rapid growth, and international cooperation remains a promising area for restraining the growth of energy related emissions in the fastest growing source of electricity demand in commercial buildings (Kooimey 1995).

Advantages of International Cooperation in the Energy Star Program

International cooperation, involving not only government sponsored programs, but manufacturer and consumer participation, offers the potential to realize significant energy savings and pollution reductions in the office equipment sector. In addition to the potential energy efficiency gains, an international program offers advantages to industry and consumers, derived mainly from administrative efficiencies, production efficiencies, and clear messages to consumers.

Large Scale Energy Savings Opportunities.

Rapid worldwide growth in product sales, and the associated growth in electricity use in offices and homes, is a compelling rationale for targeting energy use in office equipment. Office equipment sales are expected to continue to grow at a robust rate in virtually all markets for the foreseeable future. As product sales soar, technology advances move rapidly ahead, constantly increasing per unit energy requirements.

In 1997, more than 83 million computers were shipped worldwide, representing a 17% increase over the previous year (Dataquest 1997). Given current projections, worldwide computer shipments in the year 2001 are expected to exceed 151 million units. This near doubling of unit sales will likely result in a global installed computer base of more than 443 million units by 2001, an increase of 93% over 1997. Not surprisingly, more than 80% of this installed base will consist of more powerful machines that use video, networking, and audio capabilities. Each of these advanced options increases the active — and sometimes idle — energy consumption of the computer. At the same time, desktop computer users are opting for increasingly larger color monitors, with the energy consumption increasing significantly. Assuming average annual energy use of 200 kWh for conventional computers and 115 kWh for their Energy Star compliant counterparts (EPA 1998), the program offers the potential for over 37 TWh in global annual energy savings in 2001 — just for computers. The corresponding potential energy savings for monitors worldwide would exceed 87 TWh per year¹.

For imaging products — copiers, printers, fax machines, scanners, and the newer multi-function devices — opportunities for energy savings are much the same. Table 1 shows the anticipated growth in

¹The estimate of potential savings assumes all office equipment meets ENERGY STAR criteria and default power management settings are enabled. Actual savings would be somewhat lower, as not all computers and monitors would meet the requirements, and the rate of disabling power management features is substantial.

unit shipments for just the U.S. market. Several trends are worth noting. These sales will not occur in a technology vacuum; technology will surely evolve toward digital, color, and networked devices, and will consume more energy on a per unit basis. This scenario means that an energy efficiency specification must apply to an office environment with multiple network connected devices. The existence of multiple labeling programs, some which may have different specifications, will further complicate this environment, sending conflicting messages to both suppliers and consumers. A single program has a good chance to succeed in this complex environment.

Table 1: U.S. Shipments of Imaging Products (EPA 1998)

Product	1998 Units Shipped (mil.)	2001 Units Shipped (mil.)	Potential Energy Savings in 2001 (kWh)
Facsimile	1.5	0.37	62 million
Printer	3.5	5.1	1.01 billion
Copier	1.2	1.5	443 million
Scanner	4.3	20.5	5.2 billion
Multi-function	0.55	0.56	755 million

This rapid growth in sales and market penetration of office equipment, repeated in countries across the world, is ample reason for targeting office equipment for greater energy efficiency. As noted above, similarities in manufacturing, testing, and use patterns offer opportunities for economies of scale for both manufacturers and program administrators when making design changes to this equipment.

Opportunity for Global Market Transformation.

In terms of the potential for achieving more complete market transformation, an international program opens the world market to manufacturers participating in the program. When manufacturers do not have to choose among various programs with different types of criteria, definitions, and test methods, they can concentrate their efforts on meeting the single set of program principles and guidelines. Governments, by collaborating on a single set of energy efficiency criteria, can better reinforce market signals indicating consumer preferences for energy efficient products.

Rather than pursuing a multitude of slightly different energy efficiency labeling programs, the United States, Japan, and European Union — representing two-thirds of the global office equipment market (Dataquest 1997) — are choosing to participate in the ENERGY STAR program. In addition, other governments including New Zealand and Australia have adopted the ENERGY STAR logo as the symbol for energy efficient office equipment in their own markets. In so doing, they are helping to educate office equipment purchasers about the environmental and monetary benefits of energy-efficient products. The coordination of various regional and national efforts in this single energy efficiency program sends a powerful signal to the manufacturing community that the specifications in the ENERGY STAR program are acceptable to a significant portion of the total global market. This reinforces the credibility and viability of the program in the minds of both equipment manufacturers and purchasers on a global scale. This level of participation augurs well for policy makers hoping to engage industry in a long term effort to invest in new energy efficient technologies.

Manufacturing Efficiencies

One of the main reasons office equipment is such a promising area for an international program is that the products and use patterns are so similar from market to market. Typically, office equipment manufacturers sell in multiple markets with little need for product variation. A comparison of computers, printers and other office equipment products found in the United States, Japanese and European markets supports that view. In addition to the products themselves, there is little difference in how computers or copiers are used in most industrialized nations, and indeed, in many developing countries. (EC 1998; Palk et al. 1996; Roturier et al. 1996; Wilkenfeld 1996; personal communication with program managers in Australia, New Zealand, The Netherlands, Sweden, Switzerland, Thailand, and the United Kingdom.)

A single global labeling program can take advantage of these market characteristics by gaining broad industry support for common requirements among countries. Since a single manufacturer produces the same equipment for every market, it is much more efficient to design products to meet energy efficiency requirements applicable around the world. Designing and manufacturing different models for different markets would increase the cost of production. These costs, in turn would be passed on to consumers in the form of higher product prices. The market for office equipment is so price competitive that any non-performance related price increase is likely to drive a product out of the market. By collaborating on a single set of requirements under the ENERGY STAR logo, and thereby helping to maintain price competition in the market, participating countries gain the support of manufacturers and buyers alike.

In addition to the production costs involved with developing multiple product lines, manufacturers face additional administrative costs for each labeling program they join. Specifically, manufacturers typically undertake the following steps to participate in most labeling programs (Dirksen et al. 1997):

- Research and design: integrating efficiency into products while maintaining performance;
- Application: obtaining permission to use the label (requirements vary by program);
- Manufacturing: product and production standardization helps to minimize costs;
- Testing: for ENERGY STAR, manufacturers may self-certify; some labels require verification;
- Service and sales training: service personnel must address all product features;
- Advertising/marketing: developing a message and materials, worldwide distribution.

It is apparent these steps require resources in order to be carried out effectively. Undertaking this process for a multitude of labels is prohibitive for manufacturers, as cost increases result in product prices increases, and of course, a loss of competitiveness in the market. Therefore, a proliferation of labeling requirements would likely lead manufacturers to abandon some or all of them entirely. The evidence suggests that multiple product labeling programs could even result in a decline in total energy savings, as manufacturers can lose the incentive to participate in any such programs if they perceive no marketing or other advantage.

Yet another advantage to manufacturers of international coordination is the reduced costs of and barriers to coordinating with the program managers. For many companies, understanding the technical requirements for program specifications and administrative often requires deciphering complex documents in a non-native language. In addition, consultation on issues with the lead government agency charged with administering the program can involve long and often cost-prohibitive business trips which may not be central to the main mission of the company.

Administrative Efficiencies

One of the benefits that countries around the world identify in joining the ENERGY STAR program is the advantage of joining an established program that is already recognized by consumers and manufacturers. Rather than undertaking the resource-consuming managerial duties of starting new

programs, including technical and market research, establishment of energy efficiency guidelines and test methods, and educating consumers about another label, some governments view the opportunity to participate in an existing program as a great administrative gain. By adopting the ENERGY STAR program and customizing the related consumer education efforts to suit their own countries, other governments can benefit from participating in a credible ongoing program. In contrast, new programs face not only all the programmatic startup time and costs, but the inherent risk of failing to convince key supporters — funding agencies, domestic manufacturers, and consumers — that the program will succeed. All this is even more difficult if it is viewed as a program placed in direct competition with an accepted program.

Other types of administrative costs can be reduced as well. For instance, the U.S. EPA and the Department of Energy have invested considerable resources in developing public-oriented materials explaining the economic and environmental benefits of products bearing the ENERGY STAR logo. The products include brochures, fact sheets, television and print public service advertisements, web sites, evaluation tools, and detailed market and technical studies. These materials, while perhaps not suitable for all market and local audiences, can be of use to countries interested in promoting ENERGY STAR, thereby reducing the program start-up and promotional costs. For example, MITI has used some of the promotional videos for its educational campaigns in Japan, and EPA has transferred its methodology for estimating energy savings to MITI. According to MITI, this consumer awareness effort has led to increased general public understanding of standby energy consumption in office equipment and home electronics, and expects purchasing decisions to be affected by this concern. A Japanese survey indicates that 40% of consumers make purchasing decisions based in part on energy efficiency, which was rated third, after price and ease of use, placing higher in importance than brand, service, or safety (ECCJ 1996). By sharing these results with EPA, MITI can help reinforce U.S. consumer education efforts, so that EPA and other U.S. organizations can target the most critical issues to end users.

The Energy Efficiency and Conservation Authority (EECA) of New Zealand and the Sustainable Energy Development Authority (SEDA) of New South Wales, Australia have decided to base their office equipment efforts on ENERGY STAR, given the administrative advantages cited. EECA has stated that it will use any appropriate promotional and technical materials that EPA has developed for the program, investing resources that otherwise would have been used in materials development instead into educating consumers and increasing rates of implementation and actual energy savings derived from the program (Communication with EECA program manager).

Increased Consumer Recognition of Energy Efficiency

Finally, one of the most important, but difficult to quantify, advantages of international coordination of a common logo is the increased customer and manufacturer awareness and understanding of the logo. In the United States, one of the most important elements of the ENERGY STAR program is the use of the mark on a wide variety of products, ranging from office equipment to heating and cooling equipment and to homes. The result is that the logo has, to borrow a term from energy efficiency evaluation, "spillover effect." While it is still true that only a minority of the American population recognizes the ENERGY STAR logo, and even fewer can accurately describe its meaning, most have gained this knowledge from the appearance of the logo on computers, monitors, and copiers. This basic understanding of the logo can be and is carried over by consumers to other ENERGY STAR compliant products. The knowledge that the logo represents a wide range of products in similar ways also increases the numbers of retailers willing to sell and promote ENERGY STAR qualified products.

As noted above, most office equipment manufacturers sell the same products in multiple markets. Therefore, even in the absence of a formal agreement, products and packaging with the ENERGY STAR logo

are already prevalent in the European market. Indeed, informal surveys in Denmark, France, The Netherlands, and the United Kingdom indicate that a majority of computers and monitors meet the ENERGY STAR requirements. Low consumer recognition, however, has hindered the actual energy savings from the program, as only a small percentage — typically less than 25% in Europe — of users enable the power management features on their office equipment (EC 1998; Kavelaars 1997). Many European proponents of formal participation in the ENERGY STAR program base their support on the current lack of consumer recognition, citing a need to enhance end users' understanding of power management to achieve real energy savings.

In addition, a number of European countries promote national energy or environmental labels such as Blue Angel in Germany, the Nordic Swan in the Scandinavian countries, Energy 2000 in Switzerland, and others. There is also an EU eco-label for personal computers and an EU comparative label for domestic appliances. With this prevalence of labels, there is a great deal of market confusion in Europe. Surveys of companies in the Netherlands and other European countries indicated that general awareness of energy labels and their meanings is quite low, though the ENERGY STAR logo is the most widely recognized energy efficiency symbol (Kavelaars 1997).

Focused attention to building consumer awareness to the existence and meaning of the ENERGY STAR logo can succeed in encouraging consumers to purchase energy efficient products and use them in a manner that will maximize their energy savings. The "brand awareness" efforts that EPA and DOE have undertaken since September 1997 have begun to take effect, with recognition and understanding of the ENERGY STAR logo increasing. International cooperation to build this consumer awareness will have an even greater impact.

Perspectives on International Cooperation of ENERGY STAR

EPA: Improved Market Transformation.

EPA's primary goal in working with other countries in the ENERGY STAR program is to expand the opportunity to achieve energy savings through voluntary programs. For market areas that meet the conditions outlined above, the U.S. government foresees the potential to completely transform markets where there is international supply and demand and to achieve larger reductions in greenhouse gas emissions through voluntary measures. Rather than competing with other labeling programs, EPA would like to work closely with other countries to ensure that manufacturers and consumers worldwide receive a consistent message. By helping consumers identify energy efficient products without confusion, EPA expects that their demand for those products will increase. Through that market signal from customers, manufacturers will be encouraged to continue to improve their energy efficiency technologies, striving for further reductions in energy consumption in office equipment and other products. EPA sees great potential for complete market transformation by working to improve energy efficiency in a worldwide market.

Japan: An Industry Accepted Energy Efficiency Program

There was a strong incentive for Japan to join the program in 1995. The Japanese government, as concerned as other nations about the rapid growth in energy demand driven by office equipment, considered various policy options, including regulation, voluntary criteria, and eventually, international coordination to address this potential environmental problem. Japan has significant manufacturing presence in the computer and imaging markets in both the United States and Japan, and many of its

companies joined the U.S. ENERGY STAR program at its start. When Japanese companies began to discuss the establishment of domestic voluntary energy efficiency program, they recommended the ENERGY STAR criteria.

By coordinating with the U.S. ENERGY STAR program, MITI saw the opportunity to achieve the energy savings it was seeking while maintaining a high rate of industry participation through a voluntary program. MITI's preference was to continue its practice of cooperating with industry in setting environmental goals, and viewed the structure of the ENERGY STAR program requirements as one that offered efficiency by "using only the necessary energy and only when it is needed." At the same time, MITI has been able to build on the U.S. efforts, reducing some of its administrative costs as discussed above, and cooperating with EPA in consumer education efforts.

The European Union: Expansion of Existing International Efforts

The European Commission established a study group to evaluate energy demand, potential savings and the potential for reducing the growth in energy demand in 1993 (Bertoldi 1996). The Union itself, a group of 15 nations cooperating in a broad range of areas, is in itself a case study of international energy efficiency programs. The study group cited many of the same benefits we have listed above for establishing a Union-wide program for energy efficient office equipment — administrative efficiencies, manufacturing efficiencies, large scale potential for energy savings, uniformity of products among markets, and enhanced potential for market transformation through cooperation. This is based on the finding that electricity demand to support the growth in office equipment was growing at a rate of 29% per year, and that savings of 30% per year should be attainable (Bertoldi 1994). The group recommended a combination of policies, including adoption of a broadly recognized label and promotion of volume purchasing of labeled equipment in the member countries. The European Union determined that the benefits that would derive from a Union-wide collaboration could be even further achieved by collaborating with the other major office equipment markets — the United States and Japan — in the existing ENERGY STAR program. By focusing on the same specifications, test methods, and general guidelines, the efforts in each region or country to achieve market transformation in office equipment would reinforce those in other parts of the world.

Challenges to International Cooperation

While the benefits to international collaboration in market transformation programs are substantial, it can be quite challenging to coordinate with multiple countries. We offer the following challenges to policy makers considering internationalization of their programs, and recommend overcoming them where it is appropriate, mainly through careful planning, close communication, and patience.

Program Administration

Simple differences, such as multiple languages and interpretation of phrases in translation, can create difficulties if two parties move in different directions without realizing it. In other instances, guidelines that were established based on experience in a domestic program may not work as well when transferred internationally. A perfect example is the design of the ENERGY STAR logo. The initial logo included the phrase "Pollution Preventer," which was later changed to, "Saving the Earth. Saving Your Money." When included in English as part of the logo itself, the phrase carried no meaning or value to consumers in Japan. Recognizing the need to have an internationally appealing logo, the U.S. developed the "international

ENERGY STAR logo,” which includes no extra phrasing. This is one small example of the many administrative issues that have arisen while EPA and MITI have worked together. Other examples of program elements that have been adapted over time to make the program more internationally oriented include the requirement for manufacturers to test their products according to the appropriate conditions (voltage, frequency) for the intended end market; EPA’s registry of the logo with patent offices throughout the world; and adaptation of manufacturer and product registry processes to accommodate international partners and end markets.

Beyond program administration, these language and cultural differences can make it more difficult to simply transfer a method of program implementation from one country to another. For example, the EPA and DOE developed public service advertisements for U.S. consumers; it is highly unlikely that the same advertising techniques and consumer appeal transfers directly to Japan, or even to all European countries. Similarly, EPA’s calculations of domestic energy savings can be transferred to other countries, but the implicit assumptions — energy prices, rate of power management implementation, and composition of energy sources — must be reviewed and customized for another country to obtain accurate estimates of energy and pollution savings.

Differences among the cooperating agencies can also lead to slight variations in the way the program is implemented in different countries. Everything ranging from the level of involvement a government agency chooses to play in the market to the methods of communicating with industry and product end users may vary. EPA and MITI have found that their styles of implementing the program are substantially different; yet, the program requirements and basic consumer messages remain constant.

Establishing Efficiency Levels

An even greater challenge than working through administrative issues is dealing with competing objectives in setting specific energy efficiency levels. From the start of the ENERGY STAR program, EPA has worked with many individual manufacturers and trade associations to develop program requirements that would be fair and open to all and yet still encourage energy efficiency. Adding international program managers to this discussion expands the challenge of reaching consensus on specifications. There is always tension between the goal of stimulating further energy efficiency while ensuring that products maintain or improve their price and performance levels. The traditional policy challenge has been to balance the desire to set challenging specifications that maximize per unit energy savings with the desire to set specifications that allow somewhat less savings on a per unit basis, but expand the overall market for energy efficient products. The addition of different perspectives offers welcome information and suggestions for program design, but also lengthens the time required for discussions and broadens the gap between competing proposals. With the rapid evolution of technology in the office equipment market, it is not uncommon to review product specifications every year in some cases (for example, with computer specifications in recent years). Therefore, lengthy negotiations over specifications can allow programs to fall behind technology innovations, perhaps missing opportunities to be involved in manufacturers’ design decisions.

We will not claim to have found the ultimate solution for reaching consensus that perfectly satisfies every party. However, we have found that open discussions with respect for every opinion is helpful in not only fostering understanding, but sometimes in achieving breakthroughs that do satisfy industry, consumers, and policy makers. In addition, the ENERGY STAR program is working with industry to design flexible program requirements that will adapt with technology so that specifications will remain current for longer periods of time.

Conclusions

There is no doubt that the opportunities for international cooperation in market transformation, illustrated by the ENERGY STAR program, are considerable. While currently in place or envisioned only for office equipment products, such programs could be extended to include TVs, VCRs, consumer audio equipment and (in the future) certain white goods, such as room air conditioners, washing machines, and refrigerators. The total share of world GDP of the nations actively considering or currently administering ENERGY STAR programs for office equipment (including the U.S., Japan, the EU, Australia and New Zealand) is significant by almost any measure. The leverage this provides in promoting a common message to the world's consumers, as well as to the world's manufacturers, is enormous.

However, certain challenges must be met if such coordination is to be successful. First, the program must find the right balance between consistency in the technical specifications and preserving the right of various nations to promote the logo, the products it covers, and the market-oriented message in a manner that is consistent with and sensitive to local needs and customs. In addition, the program must be designed to eliminate the potential for the logo to be used as a trade barrier; specifications do not and should not favor any particular manufacturers, and should not provide cause for any country to discourage open trade of energy efficient products. Finally, all participating governments must commit not only to promoting the program consistently, but also to fully participating in the necessary administrative and oversight duties needed to ensure smooth operation of the program and protection of the logo's meaning and intended use.

The simplicity of the ENERGY STAR program is the essential ingredient that makes international cooperation feasible. Because the logo is a single-attribute mark for efficiency, any areas of potential disagreement are by definition reduced. In addition, while other differences in environmental and efficiency standards do and will continue to exist between most nations, the goals inherent in the ENERGY STAR programs — environmental protection, and energy and cost savings — can be adopted by a wide variety of actors in the international markets.

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